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MINIMUM GRADE REQUIREMENTS IN ENGLISH AND MATHEMATICS IN THE FRANCIS W. PARKER SCHOOL

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The following outline gives a brief summary of the formal outcome of the work in English and mathematics, which is expected from pupils in each grade before their promotion to the next higher grade.

These grade standards consist of the necessary knowledge-facts or "tools of expression" which are to be fixed and to be made to function through continued use during the school year. They are given in the form of minimum requirements, and up to these limits the class teachers are responsible for the thorough functioning of the work outlined. Pupils may go beyond these limits, if they can do so and at the same time satisfactorily meet the requirements in their other subjects of study.

There is continual demand for reading and written expression in connection with literature and dramatic representation, geography, and history; and there are mathematical problems constantly arising in connection with the industrial history, science, and handwork. Therefore, the formal work in reading, writing, and number is not isolated in the minds of the children. They see that many drill periods are necessary to overcome the obstacles which they meet in their daily work. Correct spelling, punctuation, capitalization, and facility in the use of mathematical tools are matters of importance and need emphasis and attention.

Therefore, while the regular subjects of study motivate the work, opportunity must be given on the program for definite drill periods. In this way the teacher in each grade may expect that pupils coming to her have been thoroughly taught the foundation facts agreed upon as necessary for that grade.

The requirements as outlined below are wholly for the teacher's consideration. They are the results in each case of at least a year's committee work, which has been checked and discussed by the entire faculty, and some time is spent each year in revising and improving the requirements according to experience and to particular grade conditions. The statements of these minimum requirements here set forth were in use in the school during 1910–11, as the changes made for 1911–12 are minor in character and have not yet been formally acted upon.

MINIMUM REQUIREMENTS IN ENGLISH

(Italicized matter will be functioned in this grade. Matter under other topics expected to be used, but not to be functioned in this grade.)

FIRST GRADE

1. Capitalization—*pronoun I*
   first word in sentence
2. Punctuation—*period at end of sentence*
3. Vocabulary—making of "school dictionary" of words functioned in the grade
4. Spelling—words in "school dictionary"
7. Phonics—games and daily drill

SECOND GRADE

1. Capitalization—*days, months, proper names, words in title*
2. Punctuation—*period after common abbreviations (Mr., Mrs., etc.)*
   question mark after interrogative sentence
3. Vocabulary— ——— *words in common use added to "school dictionary"*
   quick recognition of either written or printed vocabulary
4. Spelling—*words in most frequent use*
6. Composition—simple sentences

THIRD GRADE

1. Capitalization—geographic names
   interjection O
2. Punctuation—apostrophe in possessives
3. Vocabulary— ——— *words in common use added to "school dictionary"*
   quick recognition of either written or printed vocabulary

4. Spelling—*words in most frequent use*
5. Use of reference books—selected books referred to for information on special topics

FOURTH GRADE

1. Capitalization—*each verse in poetry*
2. Punctuation—(*a*) *period after all abbreviations*
   (*b*) comma in simpler uses—clauses and phrases
   (*c*) *apostrophe in contractions and possessives*
   (*d*) *hyphen in compound words and in divisions*
   (*e*) *exclamation point after interjections and exclamatory sentences*
3. Vocabulary—(*a*) ———*words in common use added to "school dictionary"*
   (*b*) *quick recognition of printed or written vocabulary*
4. Spelling—*words in most frequent use*
5. Composition and grammar—construction of paragraphs
6. Use of reference books—*unabridged dictionaries*

FIFTH GRADE

1. Capitalization—*proper adjectives*
2. Punctuation—comma (*a*) *in parenthetical expressions*, etc.
   (*b*) *in series*
   (*c*) *after vocative nominative*
3. Vocabulary— ———*words in common use acquired*
4. Spelling—(*a*) oral and written practice
   (*b*) *knowledge of all words in common use*
5. Composition and grammar—*recognition and intelligent use of*
   (*a*) *nouns*— (1) common, (2) proper
   (*b*) *pronouns*—(1) personal, (2) relative, (3) interrogative
   (*c*) *verbs*— (1) regular, (2) auxiliary
6. Use of reference books—dictionaries and encyclopaedias

SIXTH GRADE

1. Capitalization—(*a*) *first word in a direct quotation*
   (*b*) *substantives referring to Deity*
2. Punctuation—(*a*) *comma with direct quotation in a sentence*
   (*b*) *semicolon in compound sentences*
   (*c*) *colon before long quotations*
   (*d*) *quotation marks*—(1) titles of books, plays, and poems
   (2) quotations—prose
   poetry
3. Vocabulary— ———new words in common use acquired
4. Spelling—(*a*) *oral and written practice with all new words*
   (*b*) *accurate knowledge of all words in frequent use*
   (*c*) study of prefixes and suffixes
   (*d*) syllabication (by sound)

5. Composition and grammar—(*a*) *recognition and intelligent use of*
   (1) adjectives—*a*) descriptive
   b) articles
   (2) adverbs—*a*) of time
   b) of place
   c) of manner
   d) of degree
   e) numeral
   (3) conjunctions
   (4) prepositions
   (5) interjections
   (*b*) inflections of—(1) *nouns*—number (regular and irregular)
   (2) *pronouns*—
   a) number
   b) person
   c) gender
   (3) *verbs*—*a*) number
   b) person
   (*c*) Analysis of sentence—first steps (subject and predicate)
   Composition on class subjects—material worked over in class—from outlines furnished; approximately 120 pages of theme paper a year
6. Use of reference books— ——— works of reference

SEVENTH GRADE

1. Capitalization—(*a*) *civil and military titles*
   (*b*) *academic degrees*
   (*c*) *names of organizations and corporations*
2. Punctuation—*comma—special uses* { inverted constructions; "restrictive" relatives; appositives; participial phrases, etc.
3. Vocabulary— ——— *new words in common use acquired*
   synonyms sought for
4. Spelling—(*a*) *oral and written drill on all new words*
   (*b*) *accurate knowledge of all common words*
   (*c*) study of word tendencies—final *e* dropped, consonant doubled, etc.
   (*d*) syllabication

6. Composition and grammar—
   - (*a*) *recognition and intelligent use of nouns*—(1) *abstract*
     (2) *collective*
   - (*b*) inflection of—(1) *nouns*—*a*) gender
     b) case
     (2) *pronouns*—case
     (3) *adjectives*—comparison { regular / irregular
     (4) *adverbs*—comparison { regular / irregular
     (5) *verbs*—tense (indicative only)
   - (*c*) *sentence analysis*—(1) simple
     (2) compound (complete)
     (3) complex
     (4) clause vs. phrase
   - (*d*) composition of business and letter forms
7. Use of reference books—*continued with the needs of the grade*

EIGHTH GRADE

1. Capitalization—(*a*) *names of political parties*
   (*b*) *names of religious sects*
   (*c*) *names of governmental bodies and departments*
2. Punctuation—*dash* (*a*) parenthetical
   (*b*) showing broken construction
3. Vocabulary—(*a*) *careful acquisition of new words*
   (*b*) *synonyms and antonyms gathered*
4. Spelling—(*a*) *oral and written drill on all new words not unusual*
   (*b*) *thorough familiarity with all frequent words*
   (*c*) *formation of word groups*—
   (1) those ending in "able" and "ible"
   (2) those with negative prefixes
   (3) those with regular adjective suffix
   (4) those with regular adverbial suffix, etc.
5. Composition and grammar—
   - (*a*) *inflection*—verbs
     (1) subjunctive
     (2) imperative
     (3) infinitive
     (4) participles
     (5) principal parts
     } *a*) regular (weak)
     } *b*) irregular (strong)

(*b*)*syntax*—(1) verbs *a*) transitive and intransitive
b) voice
(2) phrases *a*) noun
b) verb
c) adjective } prepositional (form)
d) adverbial }
(3) clauses *a*) noun }
b) adjective } use
c) adverbial }
d) co-ordinate and subordinate (form)
(4) modifiers (*a*) adjective—a^1) adjective
b^1) adjective phrases
c^1) possessives
d^1) appositives
e^1) adjective clauses
(*b*) adverbial—a^1) adverbs
b^1) adverbial phrases
c^1) adverbial clauses
d^1) indirect object
e^1) nominative absolute
f^1) infinitive
a^2) complementary
b^2) of purpose

6. Use of reference books—*extended to meet all needs of the grade*

MINIMUM REQUIREMENTS IN MATHEMATICS

FIRST GRADE

1. Clearness of thought with mathematical ideas used
2. Familiarity with the addition and subtraction combinations of numbers to 12 (not automatic)
3. Fractions—$\frac{1}{2}$ and $\frac{1}{4}$—known and used in measuring and "making" work
4. Standard measures: inch, foot, yard } known and used
cup, pint, quart }

SECOND GRADE

1. All addition and subtraction combinations of numbers to 19 used. Those below 12 automatic
2. Reading of numbers to 1,000
3. Processes: Addition (with carrying) and subtraction (without borrowing) with numbers of three figures, with help of objects; e.g., money
4. Fractions, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$ of objects; $\frac{1}{2}$ of numbers up to 12

5. Standard measures: cent, dime, dollar
   cup, pint, quart, gallon
   inch, foot, yard
6. Geometry: accurate ideas of square and rectangle

THIRD GRADE

1. All addition and subtraction combinations to 19 automatic
2. Reading and writing of numbers to 10,000
3. Mastery of the processes of addition and subtraction of numbers to four places
4. Multiplication facts to 5×12 mastered
5. Meaning of fractions
   Fractional parts of numbers within limits of multiplication table learned
6. Standard measures: automatic—inch, foot, yard
   cent, dime, dollar
   cup, pint, quart, gallon
   square inch
7. Geometry: accurate ideas of squares, rectangle, triangle, areas of rectangles

FOURTH GRADE

1. Multiplication and division tables automatic through 12's
2. Multiplication process complete
3. Division by one figure
4. Rapidity and accuracy in addition and subtraction
5. Fractions: fractional parts of numbers
   multiplication of mixed numbers
6. Bills of goods
7. Standard measures: linear and square measures complete
   the gram—automatic
8. Geometry: accurate ideas of rectangles
   triangles
   circles
   cylinders
   triangular prisms
   areas of rectangles
   volumes of rectangular solids

FIFTH GRADE

1. The four fundamental operations with integers, including long division
2. Multiplication by mixed numbers
3. Use of common fractions in simple combinations
4. Standard measures: dry, liquid, and cubic measures complete
   use of centimeter, cubic centimeter, and gram
5. Bills of goods
6. Geometry: areas of rectangles, parallelograms, triangles, and trapezoids
   volumes of rectangular solids

SIXTH GRADE

1. Fundamental operations with integers reviewed and made automatic
2. All processes with simple, common, and decimal fractions mastered
3. The idea of per cent developed, but no application of percentage to business taught
4. Bills of goods
5. English weights and measures known thoroughly
   Some metric units used
6. Longitude and time, including standard time
7. Geometry: scale work
   areas of rectilinear figures and circles

SEVENTH GRADE

1. Accuracy and efficiency in fundamental operations with integers, common fractions, and decimals
2. Use of metric units mastered
3. Geometry: areas and volumes mastered
   scale work
   constructive geometry
4. Use of equation
5. Proportion as applied in the lever and in geometrical measurements of heights and distances
6. Percentage, with applications to simple industrial problems, and problems in buying and selling
7. Business forms and processes—including accounts
   bills of goods
   commission
   commercial discounts
   depositing and checking at bank
   drafts, bank, postal, and express money orders
   simple interest
   compound interest as applied in savings banks, etc.
   bank discount
   insurance
   partnership

EIGHTH GRADE

1. Accuracy in fundamental operations, common fractions, and decimals
2. Tables of measure
3. Mensuration
4. Review of proportion
5. Use of equation and algebraic formulae
6. Review of percentage, through study of taxes, revenues, stocks

MONTESSORI AND FROEBEL—A COMPARISON

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A popular magazine has by a series of very interesting articles introduced the name of Madame Montessori to the American public and created such a widespread interest in her methods of education for young children that there is danger that our proverbial enthusiasm for new ideas may carry this system on a wave of popularity only to swamp it in the end, unless a careful pedagogic study is made and the real basis of truth that it contains made clear.

We have had so many educational fads, or methods so called, widely exploited, loudly hailed, and then left to oblivion, that the question arises: Is Madame Montessori's method of scientific pedagogy to suffer the same fate? I wish that the American edition of her book when it is published, instead of "Method . . . . ," might be named "Principles of Scientific Pedagogy," to avoid the suggestions of the ill-fated name "method."

One sees things here in Rome, where I write these lines, in a long perspective and is taught to look for the fundamental in the evanescent. This great modern city is eager to give its children the best in education as in other things and is erecting new schools everywhere. But it is also very conservative, and so in some of the municipal schools the Montessori method is used in one room and the kindergarten method is another. In other schools such as that in St. Angelo in Pescheria the Montessori method only is used in the two lowest grades, while in still others one finds the kindergarten or *Giardino d'Infanzia* only.

The Association of the Beni Stabili, which has erected in the newer parts of the city where land is cheaper model tenements under the co-operative plan, has in the center of each block of buildings a *Casadei Bambini* or House of Childhood, free to those children of their tenants who are too young to enter the first class

of the municipal schools where the Montessori materials and method are used exclusively. Here in Rome, therefore, I can compare the two systems in schools where the type of child is the same, but at home I must see the Montessori method tried with children of a different race and environment. Italian children are at the same time more precocious and less nervous than our own and also more susceptible to impression. In all the schools I have visited I find the Italian children—even the youngest—rhythmic, studious, and naturally graceful. I have yet to find an instance of the monotone singing so prevalent with us.

The kindergarten as seen in Rome is without exception, so far as I have observed, of the strict Froebelian type. The classes are large, sometimes as many as fifty children of five years of age under one teacher; the occupations entirely dictated and the games directed. Yet nowhere have I seen the kindergarten circle; instead the children sit in pairs on a bench in front of a long, narrow, slanting desk. It is the *banco* as thus used that is satirized so severely by Madame Montessori, who has introduced in its place, in the schools under her direction, low, broad, firm tables, where two or at most three children can sit comfortably in little, broad chairs.

But in order properly to compare these two methods, one needs to consider the preparation of their founders, which led in each case to their development.

Maria Montessori has a twofold advantage over Froebel in that she is living at a time when she can make use of the results of the experimental psychology and child-study of the last half-century, and in that her own training and experience have been of the broadest. As a doctor of medicine she early became interested in deficient children, and studied most earnestly the methods of Itard and Séguin with idiots. As a lecturer in the University of Rome on anthropology and hygiene, she extended her researches into the biological foundations of education. When she was placed in charge of one of the hospitals for deficient children in Rome she had six years of observation and experiment, until the results of the education as devised by her brought them on a par, as regards examinations for the municipal schools, with normal children of

the same age. This wonderful success turned her attention to the problem of education for the healthy, sane child.

The establishment of the Beni Stabili schools at this time, as they were placed under her charge, gave her the opportunity for experiment and observation which she desired; and for two years she worked with a devotion and enthusiasm few teachers would have shown, without vacation, and from early in the morning until late at night. The results of these years of experience, training, observation, and experiments by a woman whose genius is of the intuitive, inventive order come to us in the fascinating record in her book and in the wonderful series of didactic material invented by her to take the place of the Froebelian gifts, occupations, and games. She is right, I think, in calling her method scientific, for she has based it on scientific principles true to psychology and developed from accurate and painstaking observation and experiment.

Madame Montessori is at this moment engrossed with the problem of the older child. Having revolutionized the education of the child from three to six, she realizes that it must not stop there. A child developed by spontaneous activity in the free atmosphere of a Montessori school, with his senses trained, his muscles co-ordinated, his creative ability stimulated, with a power of self-direction and self-government far beyond that of the usual child of his own age, would be stifled in the ordinary municipal school as found in Rome.

The educational world awaits with keen interest the result of this year of study and research, while it deplores the withdrawal for a time of Maria Montessori from the course of lectures she has given for several years and from the direction of the schools established by her. But a great genius points the way; others must follow in it and make perfect the path. In America we are, I think, ready to take her principles and her educative material into our schools much more readily than they are in Rome, for we are already working in harmony with many of her ideas. Our best teachers have the necessary psychological and pedagogical training, as few in Italy have. I should like to see Madame Montessori the center of a great educational movement, the inspiring force, the creative genius, surrounded by teachers fitted by culture and

experience to carry out her methods and in charge of schools properly equipped.

But to return to a comparison of the two systems. As Maria Montessori's preparation was so much broader than that of Froebel, as her genius—creative and intuitive like his—had a severer, more scientific training; so, it seems to me, is the point of view of each essentially different.

Froebel saw the universe in which he wished to interest the child in its unity and yet infinite variety. By means of the gifts, occupations, and games which his genius devised, the child is *led* into the different worlds which make up his environment—the world of sense, that of the family, the social organism in all its occupations, the world of Nature, and finally of the moral and spiritual life. While Froebel sees first the universe, then the child, Montessori's point of view is essentially and wholly that of the child. Frobel said: "Let us live with our children, play with them, direct them into this manifold life of the universe." Madame Montessori says: "Let the child live, free to develop all his powers; let him create his own world." Froebel's teachers are *in front* of their children, leading them, directing them; Montessori's are *behind* theirs, watching them, quietly removing all obstacles to their development, silently placing within their reach all helps to their progress, but leaving the initiative entirely to the children. Conciseness, simplicity, objectivity are their watchwords. The Froebelian training of the senses is too much that of the eye, by it perception is developed, through analysis, not synthesis; too much use is made of the instinct of imitation, not enough that of creation. Froebel's system stimulates too soon the reasoning powers of the child and does not strengthen the nervous system and muscular memory.

Perhaps a comparison of the materials employed in each system will explain this difference. The first exercises in the Montessori system are those of practical life. The child is taught to love cleanliness and order. In one school I visited the children all came up at once to shake hands with me, first showing their hands to me back and front to prove they were clean. In another school I saw a child come back to her table after a game, see a little dust

on it, go gently to the closet for a duster, then—without a word from the teacher—clean, not only her own table, but all the others. Children of three learn to button, hook, lace, tie bow knots, so that they are soon dressing and undressing themselves and others. The material for sense-training develops discrimination and exact use of language. Differences in shades of color, weight, and sound of objects are made without a mistake by very young children. For example, a child shakes, with her hand held to her ear, ten cylindrical cardboard boxes—like dice boxes—in which are pebbles or shot graded so as to made a series of five pairs; then deftly places them in order so that there is a perfect gradation from loud to softest sound. Another will take thin blocks of wood two inches square made of wisteria, walnut, and pine, balance each for a moment in his little hand, then place it correctly in a pile of others of like weight when it is impossible for an observer to distinguish any difference. Discrimination in color and tint is developed by means of silks wound on reels, eight colors and eight shades, with very slight gradation, which again trains him for practical life. The material makes the children self-correcting to a marvelous degree. It seems wonderful that the children, after their muscles have been trained and their muscular memory established, by a series of exercises, can write any word they wish on their slates or on the blackboard without a copy, and recognize and quickly correct all mistakes. The gradation from the work of a child of three to that of one of six or seven is perfect, so that our so-called kindergarten and first primary years merge into one. The Montessori teachers realize that a child does not *play* but *works*, and that if his force is guarded and not exhausted in an attempt to follow the thoughts of others, but is allowed free scope, there will be no nervous strain or fatigue. The individual differences of children are seen in this method in their choice of materials and in the time taken by them to master their use. Native bents are observed, natural talents developed. Yet there is much opportunity for group work—children help each other, work things out together. Some children will be seated at one table busily writing, three or four others will be on a square of felt on the floor, using the large, paper-script letters to form words and sentences. Others will be

grouped around the series of sticks, from one to ten, which is so valuable for the development of the sense of number. Another group will take their slates, writing sentences for others to read or little problems for others to solve. All is spontaneous activity, yet all are working harmoniously together.

The material invented by Madame Montessori is more practical than that of Froebel, is a means to an end, is exact and accurate, and is scientific because true to psychological and biological laws.

The dangers of this method, as in that of the kindergarten, lie in the teachers employed. Just because in this system the teacher apparently does so little, is her activity really all the greater. I have seen much poor teaching here as well as much fine work, such as that of Madame Galli-Succenti, who has introduced the material and the method into one of the municipal schools, and whose long training and experience make her particularly valuable as a practical exponent of these principles. On the other hand, a teacher with slight pedagogic or psychologic training will get a superficial idea of the principles, and as a result her school will be poorly disciplined and the work in it aimless.

I hope that some great university in America will create a school for the study and practice of the Montessori methods, which are destined, I feel sure, if properly understood and applied, to revolutionize primary education.

ROME, ITALY
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THE ELIMINATION OF WASTE IN EDUCATION

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Six years ago the site where Gary now stands was a region of waste sand-dunes covered here and there with patches of stunted trees. Today there stands upon this site at the southern end of Lake Michigan the most complete system of steel mills west of Pittsburgh, and a rapidly growing city of some twenty-five thousand inhabitants.

The rapid growth of the city has brought to the school department a financial problem of peculiar difficulty. The population consists for the most part of immigrant foreign laborers, possessing but little taxable property. The city having been practically created by the United States Steel Corporation, naturally its plants are undervalued in the assessments for taxation. Still further embarrassment grew out of the fact that according to the laws of the state of Indiana, school revenues for any given year are obtained upon an assessment of property made almost two years before. In a city where the population had been doubling each year, the result was that the revenues for any given year were based upon an assessment made when the population was only about one-quarter as great. Furthermore, the method of distributing the state school revenues failed to recognize the pressing needs of a rapidly growing city. Revenues were apportioned on the basis of an enumeration made the previous April; but the enumeration was increasing 50 per cent between April and September, and another 50 per cent before the end of the school year.

Along with these unusual difficulties in the raising of current revenues there were on the other hand unusual immediate demands. In a city of slow growth, the school plant grows slowly and the yearly increase is no great burden upon the community; but in a new city having no school plant there was the immediate necessity

of creating a complete school plant in addition to the annual cost of instruction and maintenance.

There were two ways of meeting the situation. One was to build inferior buildings, omit playgrounds, school gardens, laboratories, workrooms, and assembly halls, to employ cheap teachers, to increase the size of classes, to cut down the yearly term to eight months, or to accommodate two shifts of children in the same building each day by doing half-time work. The other possible method was to create a thoroughly modern school plant, equipped with every modern necessity; then to operate it according to recently developed principles of scientific management, so as to get a maximum of service from a school plant and teaching staff of minimum size.

The majority of cities suffering from a shortage of funds choose some portion of the former alternative. Illustrations are sufficiently numerous, from New York and Chicago on the one hand down to the poorest school district on the other. But the new city was being built by engineers, superintendents, and business managers who were familiar with the principles of scientific management in the steel industry; and when the educational engineer appeared and showed how it was possible to introduce similar principles of management into the operation of the school plant, his words fell upon understanding ears; and Gary, contrary to the usual plan, adopted the latter alternative.

The first principle of scientific management is to use all the plant all the available time.

In a school of the ordinary type, accommodating eight classes, let us say, of forty pupils each, but equipped in the most modern manner possible, there would be eight ordinary classrooms, each capable of seating forty children. In addition, there would be wide corridors, an assembly room, an indoor playroom or gymnasium, bathing and swimming-pool, shops and workrooms, science room, outdoor playground, and school garden. When all of the classrooms were in operation, the rest of the facilities of the plant would be lying idle. To the extent that the other facilities of the plant were actually being used, to that extent the classrooms would be lying idle. The result of such a policy is that half of the plant is idle half the time. In other words, the usual plant, if it is fully equipped

is operated during school hours at about 50 per cent of efficiency. The task of the educational engineer at Gary was to formulate a plan of operating his plant during school hours at 100 per cent efficiency.

DAILY PROGRAM NO. I

Time	Regular Studies				Special Activities				Time
	Classroom I	Classroom II	Classroom III	Classroom IV	Basement, Garden, Attic, Auditorium Shops, Workrooms, Laboratories		Playground		
8:45–10:15....	1A	2A	3A	4A	1B	3B	2B	4B	.... 8:45– 9:30
					2B	4B	1B	3B	.... 9:30–10:15
10:15–11:45....	1B	2B	3B	4B	1A	3A	2A	4A	....10:15–11:00
					2A	4A	1A	3A	....11:00–11:45
1:00– 2:30....	1A	2A	3A	4A	1B	3B	2B	4B	.... 1:00– 1:45
					2B	4B	1B	3B	.... 1:45– 2:30
2:30– 4:00....	1B	2B	3B	4B	1A	3A	2A	4A	.... 2:30– 3:15
					2A	4A	1A	3A	.... 3:15– 4:00

For a group of eight primary classes of forty pupils each he provided a plan of work as shown in Daily Program No. I. For the eight classes only four regular schoolrooms are required. While these classrooms are occupied by four classes, the other four classes are being accommodated half upon the playground and the other half in the workrooms, assembly room, school garden, science laboratory, or science excursions. The program is divided into regular and special studies. The regular studies in the elementary school consist of arithmetic, history, geography, and the formal language studies of reading, writing, spelling, and composition. The special activities are nature study, manual activities, drawing, literature, music, and play. Half the day is given by the pupil to the regular studies, and half the day to the special activities. The regular work consists of two periods of ninety minutes each, one in the forenoon one in the afternoon. The special studies are likewise

given a period of ninety minutes in the forenoon and ninety minutes in the afternoon.

The ninety-minute periods devoted to special activities are each divided into two forty-five minute periods as shown in the program. The ninety-minute periods devoted to the regular studies are divided as the teachers see fit. Each teacher has one class that is not divided into sections and a certain portion of the regular studies to be covered in the three hours given to her. She is free to divide the time as seems best. Theoretically she is supposed to divide the time equally between recitation periods and study periods. This gives her an opportunity to train pupils in methods of study, to supervise their study, and to give individual help to those in need of it. During these study periods she is expected to do all the paper work that falls to her for the day, so that when her six hours' schoolroom service is ended, her day's work is done.

DAILY PROGRAM No. II

In actual practice it is found advisable to alternate the manual arts with the music, drawing, and literature so that each may have a ninety-minute period every other day.

Time	Regular Studies				Special Activities				Time
	Classroom V	Classroom VI	Classroom VII	Classroom VIII	Science	Manual Arts	Music, Drawing, and Literature	Play	
8:45–10:15	5B	6B	7B	8B	5G	7G	6G	8G	8:45– 9:30
					6G	8G	5G	7G	9:30–10:15
10:15–11:45	5G	6G	7G	8G	5B	7B	6B	8B	10:15–11:00
					6B	8B	5B	7B	11:00–11:45
1:00– 2:30	5B	6B	7B	8B	5G	7G	6G	8G	1:00– 1:45
					6G	8G	5G	7G	1:45– 2:30
2:30– 4:00	5G	6G	7G	8G	5B	7B	6B	8B	2:30– 3:15
					6B	8B	5B	7B	3:15– 4:00

The daily program for the four upper grades of the elementary school is shown in Daily Program No. II. Putting the two pro-

grams together one has the daily program of a regular elementary school accommodating sixteen classes. This is done, however, with eight regular classrooms used in connection with special rooms and outdoor playgrounds. All the plant is used all the available time. None of it is idle any portion of the school day.

Although operating his plant six hours per day at the very high percentage of efficiency shown, still the educational engineer is not yet satisfied with the percentage of efficiency attained. The six-hour day is not enough. The plant might well be operated continuously from eight o'clock in the morning until six o'clock in the evening. The time once needed for chores at home is no longer used for that purpose in the majority of cases. It becomes "street and alley time," to borrow Superintendent Wirt's expressive phrase and tends toward the undoing of the work that is actually done under school conditions. A start has been made in an informal way toward remedying this lack. The playground teachers have charge of all of the playground facilities for an hour before school, during the noon hour, and for an hour or two after school. Since there is a larger number of playground teachers than usual, it is possible to divide this voluntary work among themselves so as not to require the attendance of any one of them for more than one of these extra periods per day. The plan is to be extended to the early and late use of laboratories and shops as well.

That an expensive plant should lie idle during all of Saturday and Sunday while "street and alley time" is undoing the good work of the schools is a further thorn in the flesh of the clear-sighted educational engineer. That the plant should lie idle is one loss. That work already done should be undone is a further loss. Scientific management demands that the school buildings be in use on Saturdays and Sundays. Gary has made a start in this direction by opening her buildings and placing the entire school plant at the disposal of the city's children for seven hours each Saturday. Attendance is voluntary; yet it amounts to about one-half of the total enrolment. One-half the teachers report for duty on Saturdays and are paid extra for all such voluntary services at the rate of one dollar per hour for those studies that are confining, and seventy-five cents per hour for the active and less exacting portions

of the work. The Saturday sessions are proving popular with both teachers and pupils.

There is a further loss of efficiency in the use of the plant by closing the building during the two months of summer. This alone is a loss of some 16 per cent, no small item in the calculations of the efficiency engineer. Several years before, Superintendent Wirt had established the all-year school divided into four quarters, at Bluffton, Indiana. Pupils were required to attend three of the quarters or nine months of the year. They could take as their vacation the quarter that seemed most desirable.

Naturally this feature of scientific management seemed to be a desirable means of economy at Gary; but unfortunately the antiquated legal machinery of the state forbade. All that is permitted them yet is the ten months of regular school, and the two months of voluntary vacation school. Gary will have the all-year school, however, as soon as the state officials see fit to make it legally possible.

A second principle of scientific management is to reduce the number of workers to a minimum by keeping each at the maximum of his working efficiency.

In the usual school system, in a building containing sixteen classes of forty pupils each, there would be sixteen regular classroom teachers. But in addition to these sixteen regular teachers, if the special activities were carried on as fully as modern conditions are demanding, there would be needed the services of additional special teachers of drawing, music, manual activities, elementary science, and organized play; or, if not special teachers, then numerous special supervisors of these subjects to aid the regular teachers.

But Gary does away with the extra expense for extra teachers or the overhead expense of unnecessary supervision by having specialization within the group. According to their system, for every sixteen classes there are needed only sixteen teachers, eight regular and eight special. Both regular and special teachers can be experts in their particular fields, requiring no supervisors other than the regular building principals and the city school superintendent. The plan, if employed in a large city, would probably require the services of a small expert staff of special supervisors. It reduces the number of workers, however, to a minimum.

Maximum working efficiency is brought about here as everywhere by division of labor, special preparation, and the adjustment of the load to the strength and capacity of the worker. The objections to the departmental plan of organization are met by placing the pupils under a classroom teacher for all the regular traditional school work, and by keeping each class intact throughout the day.

Teachers are not expected to do school work of any kind except during the periods of the day for which they are regularly employed. They are to do paper work during study periods and they are not to take books or papers home at night. The highest working efficiency demands certain qualities of personality that are not to be had without normal association with one's fellows, nor without proper and normal leisure occupations. One cannot be a proper teacher if he does not engage in the many varied activities that are normal for every completely developed human creature. Teachers are expected to live like other people, and when their day's work is done to leave it behind them as completely as other classes of workers.

Under present conditions in order to secure even reasonable efficiency, the special activities must usually be taken care of by special teachers. It is argued that if the immature pupil is able to cover the whole range of subjects, that certainly the regular teacher ought to be able to do the same sufficiently for teaching him in his immaturity. But as a matter of fact the special activities require special points of view and special attitudes of mind of such diversity that under present conditions at least it is not possible to secure regular teachers who can assume the different mental attitudes at all adequately. To be a leader in organized play, for example, requires a special type of personality, special attitudes of mind, a special understanding of the needs of the child and of the many directions of individual and social development that have their roots in play. The work requires a special form of dress, a specially developed physique, special training that covers years. Without these things on the part of the teacher, the work will be slighted. It is certain almost to be undervalued by the regular teacher and her valuation of the matter as a school activity is certain unconsciously to be transmitted to the minds of the pupils and to the minds of the parents. The last few years have shown the indispensable nature of a large amount of organized play directed by the playground

supervisor. Nobody but the specially trained playground teacher will do the work adequately in the face of the present general undervaluation on the part of the general community. It will never really get into the curriculum if left to the regular teacher.

The manual and industrial activities are in a similar position, as well as music, elementary science, school gardens, practical civic activities, and the like. Left to the regular teacher, they are academicized and devitalized simply because he cannot carry so many points of view. It may be possible for a few highly endowed individuals to see all these matters in so large a way that he can assume the various viewpoints and exchange mental and physical attitudes in passing from one to the other as frequently as required through the day; but it is not this type of individual that is teaching in the elementary grades of our public schools.

The burden must be adapted to the strength and capacity of the worker. To require so much of the elementary teacher of the usual type is to undermine physical vitality and mental integrity. It might well be different, however, if the so-called special studies were matters of the general community consciousness and if the teachers of our day have been effectively trained in all of them from their childhood up. The mental attitudes required by the special activities might then be as much matters of second nature as is the case with the regular studies. But for the immediate present it appears that teaching differentiation is the only practicable solution.

A third principle of efficient management is to eliminate waste. Ayers has given us the figures that measure the waste of retardation. Gulick and others have shown the waste that results from ill-health and lowered vitality. Social workers are pointing out the waste of undoing the pernicious effects of the vicious street and alley influences. Gary attempts to reduce retardation to a minimum by two or three methods. Teachers during the study periods give individual attention to the laggards, teaching them how to study, helping them to overcome difficulties. The voluntary Saturday classes and the summer vacation school classes receive a very large proportion of the backward pupils and aid in keeping them up to grade. Further, if a boy is weak in some particular subject, it is possible to give him double work in that subject. Let

us say a 4A boy is weak in arithmetic. It is possible for a time for him to omit some of his special activities and take arithmetic with the 4B class also, thus permitting double time in arithmetic. If he is weak in all of his regular studies it is easy to drop him out of his special activities for a time and permit him to do double work in the regular studies. The special activities are of such a sort that he can return to his classes there without difficulty.

Waste due to ill-health and lowered vitality is in large measure eliminated by employing a large portion of their time in outdoor play under playground teachers specially trained for the work. Pupils of lowered physical vitality are sometimes given double work in the special subjects, the regular studies being wholly omitted until they are sufficiently built up physically. One boy, for example, who was pronounced by the physician wholly unable to attend school, was placed in the special classes for double time and after six months was wholly cured. It was a case of sending a boy to school to make him well rather than the usual situation of taking a child out of school to make him well. The system combines the virtues of the open-air school with those of the regular school.

There is an attempt to eliminate the waste of labor in counteracting the evils of street and alley influences by extending the regular school days, by introducing much healthy play during a portion of the day, and by occupying the pupil for an additional voluntary two hours each day under the regular playground teachers; and for several hours on Saturdays. There is the definite intention of making the school the recreation center for the use of the city. They attempt to gather up in a unitary way in the school system the various influences which in Chicago, for example, are to be found in part in the school system and in part in the small parks recreation centers. They would look upon the introduction of the separate municipal recreation centers such as are being introduced into so many of our cities as a disastrous backward step.

In this connection a statistical comparison, made by Superintendent Wirt, of the uses of the recreational facilities of the Emerson School at Gary with the uses of similar facilities in the recreation centers of the South Park system, which is considered the best

of its kind in the world, shows the advantages of a unitary organization of educational facilities. The table shows the Emerson School to be from four to eight times as efficient as the average of these twelve small parks and to be from two to five times as efficient as most efficient of the small parks. This comparison is all the more striking when one remembers that the small parks of South Chicago are located in the most congested portions of the city whereas Gary has no congested district. And also that the recreation parks of the South Side vary in size from ten to sixty acres whereas the Emerson School plant includes only five acres.

TABLE I

COMPARISON OF THE NUMBER OF USES OF VARIOUS RECREATIONAL FACILITIES OF THE TWELVE SMALL PARKS OF THE CHICAGO SOUTH PARKS SYSTEM WITH THE NUMBER OF USES OF THE CORRESPONDING FACILITIES AT THE EMERSON SCHOOL AT GARY FOR TWELVE MONTHS

	CHICAGO RECREATION PARKS		EMERSON SCHOOL
	Average	Highest	
Outdoor gymnasium	164,314	278,498	1,200,000
Indoor gymnasium	25,750	45,793	330,000
Swimming-pools	60,400	115,542	240,000
Library reading-room	48,940	85,933	300,000

As a means of caring for pupils that come from homes so vicious as to be subversive of all healthy educational influences, the Gary school system owns a farm of one hundred and sixty acres lying twelve miles outside the city. Here boys from twelve to eighteen years of age live in cottages that make up what they call "Boytown." They attend school during school hours and work about the cottages and upon the farm during out-of-school time. They are paid for their labor at a definite rate, usually fifteen cents per hour; and in turn they are expected to pay their board, at the rate of three dollars per week. The school is neither a parental school, however, nor an orphan home. The boys are neither delinquent nor dependent, and their attendance is voluntary.

The work-cards for two weeks of one of the boys will show the nature of their work outside of school hours. During these two

weeks the earnings of the boys ranged from a miminum of $9.30 to a maximum of $18.01. After deducting board for the two weeks, surplus earnings amounted to $3.30 as the lowest and $11.81 as the highest. This out-of-school work is looked upon as an integral portion of their education.

TABLE II

WORK-CARD FOR TWO WEEKS OF ONE OF THE BOYS IN THE FARM SCHOOL

Date	Work Done	Time	Rate	Earned
December 18.....	Husking corn.....	2 hrs.	15c	$0.30
December 19.....	Shoveling clay....	4 "	15	.60
December 20.....	Husking corn.....	3 "	15	.45
December 21.....	Mending tent.....	5 "	15	.75
December 22.....	Hauling wood.....	5 "	15	.75
December 23.....	Husking corn.....	3 "	15	.45
December 25.....	No work.....	0 "	15	.00
December 26.....	Laying linoleum...	8 "	15	1.20
December 27.....	Laying lineolum...	9 "	15	1.35
December 28.....	Laying linoleum...	9 "	15	1.35
December 29.....	Teaming.....	6 "	15	.90
December 30.....	Painting.....	8 "	15	1.20
	Total earned.....	.....	.....	$9.30
	Board for two weeks	.....	.....	6.00
	Net earnings.....	.....	.....	$3.30

A fourth principle of general scientific management is: Work up the raw material into that finished product for which it is best adapted. Applied to education this means: Educate the individual according to his capabilities. This requires that the materials of the curriculum be sufficiently various to meet the needs of every class of individuals in the community; and that the course of training and study be sufficiently flexible that the individual can be given just the things that he needs.

The program as shown above for the elementary grades, and this, by the way, is continued through the high school, appears to go a long way toward meeting both these requirements. If an individual is of the motor type of mind, with his interests lying in the field of manual industry, with neither tastes nor ability for abstract intellection—the type that is prematurely forced out of our schools uneducated and unprepared for his share of the world's work—he can be given a maximum of work in the special activities

and a minimum in the academic studies. Upon reaching the age when bookish studies tend to force him out of school, it is possible to give him double work along the line of manual activities and the correlated applied science, omitting the general studies entirely. This is being done at present for certain students who are taking trade courses in the high school. On the other hand, if one is clearly of the intellectualistic type of mind, preparing for a professional career, it may be desirable to give him a maximum of the general studies, and a smaller amount of the concrete activities. There might be periods when all his regular work should be for a time confined to studies of the academic sort, securing his physical exercise during out-of-school hours. The Gary plan is adapted to meet all such contingencies.

There is a very great degree of flexibility. A pupil can take all regular studies, and no special ones; three quarters, regular, and one quarter, special; half regular, and half special; one quarter regular and three quarters special; or all special. The schools are able to make an appeal to every type of student.

There is another aspect of this education according to need that is worthy of attention. The needs of boys are in part different from those of girls along lines of vocation, recreation, civic labors, and personal hygiene. The program of the grammar grades given above shows the separation of boys and girls beginning with the fifth grade. This is based upon no theoretical considerations as to the desirability or undesirability of coeducation. It is simply the practical and more or less unforeseen result of attempting to give to each pupil the thing that he needs.

The organization of classes for play, for gymnasium and swimming-pool, for manual activities, for applied science and mathematics as related to manual activities, brought about the placing of the boys in certain classes and of the girls in others. And further, at this age, it seems advisable that classes be kept together, and not broken up every hour as may be the case with departmental disorganization. The result is that the segregated classes formed for the special activities retain their unisexual character in the regular studies.

This in turn has its effect upon the teaching force. The boys

require masculine leadership in many of their activities, and the girls, feminine leadership. These practical demands insure the employment of sufficient proportions of both men and women in the system. Cries of calamity have been arising rather numerously of late on account of the disappearance of men from the profession. But as long as school activities consist of little more than academic matters to be poured into the heads of pupils, a task that can usually be better performed and almost always more gladly performed by women teachers, these Jeremiahs are not likely to accomplish the desired results. But constructive work as at Gary, not even raising the question, is solving the problem in the way in which the country in general is likely to solve it.

Other aspects of the system are reserved for later discussion.

A STUDY OF THE READING VOCABULARY OF CHILDREN[1]

MYRTLE SHOLTY

The problem in this experiment was a study of the reading vocabulary of children who had attended school one and one-half school years, or thirteen and one-half months. When taking up the study of this problem I had five things in mind. I wanted to find out, first, the total number of words in the reading vocabulary of the children; second, the number of words known in context; third, the number of words known out of context when seen on the instant; fourth, the number of words the children could build up when allowed to see the words as long as they wished; and fifth, the number of words they could neither read correctly when seen on the instant through the tachistoscope nor build up when given all the time they wished.

To find out the reading vocabulary of these children, it was necessary to examine all of the readers the children had read since they entered school, and to arrange the vocabularies of these readers in alphabetical order. To find the number of words each child knew in context, I asked each child to read through all of the books he had read and I noted the words he did not know. In order to find the words the children knew out of context when seen on the instant, it was necessary to use the tachistoscope. The words when shown through the tachistoscope were not arranged in alphabetical order. As the words were shown I noted those read correctly on the instant. The words not read correctly on the instant were shown to the children and they were given as much time as they liked to build them up, and I noted the words they could neither build up nor read correctly on the instant.

In choosing the subjects for this experiment I asked the regular reading-teacher of a group of children to select one of the best

[1] From the Laboratory of Experimental Education, the University of Chicago.

readers of the class, one of the poorest, and a medium reader. A was the child selected as the best reader, B as the medium reader, and C as the poorest reader. A and C were each eight years old, while B, the medium reader, was eight and one-half years old.

After the experiment was completed I asked the regular teacher of these children how they stood in their other school work. She reported that A, the best reader, was much below the average in all her other school work, had no initiative, and could never be depended upon to do a piece of work. B, the medium reader, was also below the average but was a good faithful plodder. C, the poor reader, was above the average in all her other school work and always took the initiative.

As the experiment progressed I became anxious to know whether there were more phonetic than sight words in the reading vocabulary of these children, and whether the children read as many phonetic as sight words correctly as wholes. Accordingly I added this question to the original problem.

All the words that could be built up or worked out by sound were called phonetic words. Examples of these words are "finished" and "interesting." All of the words that could not be worked out by phonics were called sight words. Examples of these are "onions" and "cousin."

The reading vocabulary of these children was found to consist of 1,588 words. Of these 834, or 52.5+ per cent, are phonetic words while 754, or 47.4+ per cent, are sight words.

The significant result in Table I is the fact that each child knew a greater percentage of sight words in context than phonetic words. This seems strange when the children had had daily drills in phonics for twelve months. It can probably be accounted for by the facts that the children are interested in the subject-matter and do not want to take the time to work out the words for themselves, and that they have not as yet learned to see the phonetic words as wholes, but depend upon building them up each time.

Table II shows, strangely enough, that B, the child who knew most words in context, knows the fewest words when seen on the instant. It seems still more strange that she read a much smaller percentage of the phonetic than sight words on the instant. C

also reads a smaller percentage of phonetic words than sight words on the instant.

TABLE I

THE NUMBER OF WORDS KNOWN IN CONTEXT

	Total No. of Words	No. of Words Known in Context	Percentage of Words Known in Context	Total No. of Phonic Words	Phonetic Words Known in Context	Percentage of Phonetic Words Known in Context	Total No. of Sight Words	Sight Words Known in Context	Percentage of Sight Words Known in Context
A.....	1,588	1,392	87.6	834	725	86.9	754	667	88.4
B.....	1,588	1,438	90.5	834	704	84.3	754	734	97.3
C.....	1,588	1,309	82.4	834	661	79.2	754	648	85.9

TABLE II

THE NUMBER OF WORDS KNOWN WHEN SEEN ON THE INSTANT THROUGH THE TACHISTOSCOPE OUT OF CONTEXT

	Total No. Words	No. Words Known When Seen on the Instant	Percentage of Words Known When Seen on the Instant	Total No. of Phonetic Words	No. of Phonetic Words Known When Seen on the Instant	Percentage of Phonetic Words Known When Seen on the Instant	Total No. Sight Words	No. Sight Words Known When Seen on the Instant	Percentage of Sight Words Known When Seen on the Instant
A.....	1,588	977	61.5	834	503	60.3	754	474	62.8
B.....	1,588	798	50.2	834	265	31.7	754	532	70.6
C.....	1,588	1,009	63.5	834	461	55.2	754	548	72.6

TABLE III

THE NUMBER OF WORDS THE SUBJECTS WERE ABLE TO BUILD UP*

	No. Words Not Known When Seen on the Instant	No. Words Built Up	Percentage of Words Built Up	No. Phonetic Words Not Known When Seen on the Instant	No. Phonetic Words Built Up	Percentage of Phonetic Words Built Up.	No. Sight Words Not Known When Seen on the Instant	No. Sight Words Worked Out	Percentage of Sight Words Worked Out
A.....	611	412	67.4	331	232	70.08	280	180	64.28
B.....	790	670	84.8	569	525	92.2	221	145	65.61
C.....	579	315	56.1	373	254	68.09	206	61	29.61

* These were words they did not know when seen on the instant, but were able to work out when given more time.

Table III shows that B was able to build up a very large percentage of the words, while C was able to build up slightly over

half of the words. Although Table II shows that C knew a larger percentage of the words when seen on the instant, Table IV shows that she was the most dependent reader because she could build up fewer words. B knows but half of the words when seen on the instant, but Table III shows that when she is given time she is able

TABLE IV

THE NUMBER OF WORDS THE SUBJECTS COULD NOT READ ON THE INSTANT NOR BUILD UP WHEN GIVEN MORE TIME

	No. Words Not Known When Seen on the Instant	No. Words Not Known	Percentage of Words Not Known	No. Phonetic Words Not Known When Seen on the Instant	No. Phonetic Words Not Known	Percentage of Phonetic Words Not Known	No. Sight Words Not Known When Seen on the Instant	No. Sight Words Worked Out	Percentage of Sight Words Worked Out
A.....	611	199	32.6	331	99	29.02	280	100	35.72
B.....	790	120	15.2	569	44	7.8	221	76	34.39
C.....	519	264	43.9	379	119	31.91	206	145	70.39

TABLE V

RESULTS OF THE READINGS THROUGH THE TACHISTOSCOPE

	Total No. Words	No. Words Read Correctly as Wholes on the Instant	Percentage of Words Read Correctly on the Instant	No. Words Read in Parts	Percentage of Words Read in Parts	No. Words Misread	Percentage of Words Misread	No. Words Not Seen	Percentage of Words Not Seen
A.....	1,588	977	61.5	2	0.1	182	11.4	427	26.8
B.....	1,588	797	50.2	628	39.5	126	7.9	37	2.3
C.....	1,588	1,009	63.5	264	16.6	126	7.9	189	11.9

to work out more words than either of the other children and therefore, though the slowest, she is the most independent reader. A and C are the fastest readers. This probably seems strange when C was given to us as the poorest reader. It can be accounted for by the fact that she made much greater improvement than either of the other children, so that, when the experiment was finished she was the fastest reader of the group.

The results of the readings through the tachistoscope show two types of readers. Messmer[1] calls these two types the objective and

[1] Huey, *Psychology of Reading*, pp. 92.

subjective readers. A is a subjective reader; B and C are of the objective type. While A did not read more words correctly when seen on the instant, she read but two words in parts, and she misread and failed to read more words than the other children. She evidently never had learned to analyze words and always saw the total word form. B and C read a great percentage of the words in

TABLE VI

THE NUMBER OF PHONETIC AND SIGHT WORDS READ IN PARTS

	Total No. Words	No. Words Read in Parts	Percentage of Words Read in Parts	Total No. Phonetic Words	No. Phonetic Words Read in Parts	Percentage of Phonetic Words Read in Parts	Total No. Sight Words	No. Sight Words Read in Parts	Percentage of Sight Words Read in Parts
A.....	1,588	2	0.1	834	0	0	754	2	0.2
B.....	1,588	628	39.5	834	495	59.2	754	133	17.6
C.....	1,588	264	16.6	834	220	26.3	754	44	5.8

TABLE VII

THE NUMBER OF PHONETIC AND SIGHT WORDS MISREAD

	Total No. Words	No. Words Misread	Percentage of Words Misread	Total No. Phonetic Words	No. Phonetic Words Misread	Percentage of Phonetic Words Misread	Total No. Sight Words	No. Sight Words Misread	Percentage of Sight Words Misread
A.....	1,588	182	11.4	834	92	11.0	754	90	11.9
B.....	1,588	126	7.9	834	57	6.8	754	69	9.1
C.....	1,588	126	7.9	834	59	7.0	754	67	8.8

parts. They also misread and failed to read much fewer words than A. B and C depended much more upon phonics than A. Table VI shows that they also read a much larger percentage of the phonetic words in parts than of the sight words. While this is true, we see from Tables VII and VIII that they misread fewer phonetic words than sight words. The children who depended most upon phonics read with fewer errors than the one who read by word wholes.

No conclusions can be drawn from this limited study, yet it seems to me it would be worth while for primary teachers to study

the reading of the pupils to find out whether phonics makes more careful as well as more independent readers or whether it leads children to see words in parts and thereby makes slower readers.

The children were taught by the initiative, word, sentence, and phonetic methods. They knew their letters and would often spell a word when trying to work it out.

TABLE VIII

THE NUMBER OF PHONETIC AND SIGHT WORDS NOT SEEN

	Total No. Words	No. Words Not Seen	Percentage of Words Not Seen	Total No. Phonetic Words	No. Phonetic Words Not Seen	Percentage of Phonetic Words Not Seen	Total No. Sight Words	No. Sight Words Not Seen	Percentage of Sight Words Not Seen
A.....	1,588	427	26.8	834	239	28.6	754	188	24.9
B.....	1,588	37	2.3	834	17	2.0	754	20	2.6
C.....	1,588	189	11.8	834	94	11.2	754	95	12.4

The most significant result in this study is the fact that these children, although taught by the same method, read words differently. I think also that the fact that the two children who depended most upon phonics and read a much greater percentage of the words in parts should be considered. We might conclude that these children had not had enough drill upon recognizing words on the instant; and that it is not enough to teach children how to build up words by means of phonics, but that these words should also have sufficient drill to enable the children to recognize them at sight.

STUDIES IN THE PRINCIPLES OF EDUCATION

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V. SELF-ACTIVITY

In one form or another this principle has been advocated by all of the writers on education in recent times. There is much that can be said in a very convincing way about the importance of arousing a student to activities in which he is naturally interested, and which he will pursue because his own spontaneous desires lead him toward these activities. Indeed, it is axiomatic that one cannot compel intellectual development on the part of another. The teacher can surround the student with all of the incentives to mental activity, but the mental activity must proceed from within.

The doctrine has sometimes been advocated in such an extreme form as to make it appear that it its advocates would leave entirely to the student the determination of what activities are to be undertaken in the school. It has sometimes been said, for example, that the study of Nature may safely be carried on in terms of the objects that children bring into the classroom. Furthermore, it has been said that it would be very much better to allow children to develop their number-work and the other formal types of knowledge through their own discovery of the relation of these types of knowledge to the constructive activities which they themselves initiate. Give a boy the opportunity to work in the shop or a girl the opportunity to deal with textiles, and depend upon these activities to bring in their train a series of questions which will induce the child to exert himself in further study in order that he may arrive at the solution of the questions which he has spontaneously raised.

Certainly when the doctrine is stated in this extreme form, we find ourselves in difficulty in applying it to ordinary school practices. Children undoubtedly exhibit from time to time forms of activity

which it is very difficult for the school to utilize. A course commonly adopted in such cases is the suppression of these activities. Furthermore, it does not always follow that the children will bring into the classroom the objects which can most advantageously be studied together, or exhibit in their spontaneous activities just those tendencies which seem to be required for their systematic and economical development. Certain activities need to be suggested by the teacher at a given time in order that the general course may include all of the different phases of training that it is desirable to give the student.

These general statements about suppressing and arousing activities may be made concrete as follows: A child very frequently exhibits certain emotional types of behavior, such as fear or anger, which it is quite impossible for the school to regard as conducive to school activity. One may say in such a case as this that the school should turn the emotion into some other channel, and thereby utilize the energy which would be wasted or perverted if the emotion were allowed to go on without interruption. Such a statement as this is something of an evasion of the real issue. The fact is that the emotion of fear or anger or excitement must be changed, so that it is no longer the type of activity that the child would exhibit spontaneously, and this complete change in the mode of activity shows the importance of a kind of control exercised by the teacher which is superior to that which is supplied by the self-activity of the pupil at the moment and often in opposition to it. An emotion of anger must be checked either by a distracting engagement offered by the teacher, or by a repressive penalty which the teacher uses in order to redirect the child's behavior.

Again, it is very unlikely that a child without some guidance would give attention to certain phases of arithmetic. The teacher may utilize the natural desire of the child to be efficient in what he undertakes to do, but she usually has to carry the child farther in his efforts at exactness than he would naturally go. She calls his attention to the dangers of inexactness and by a comparison of other products with his own shows him the defects into which he has fallen. She thus stimulates in the student a desire to go farther than he naturally would go. She has therefore supple-

mented his tendencies toward self-guidance by certain social standards which she can present to him as legitimate motives for further behavior. The multiplication table is seldom learned through sheer self-activity.

These examples suggest the desirability of a re-examination of the whole principle of self-activity with a view to determining how far the impulses that children bring into the schools need to be modified on the one hand, or supplemented on the other, in order to make the child's training complete.

Before taking up this discussion of the enlargement of the child's natural activities it may be well to draw a distinction which is of importance in the discussion of this doctrine. Certain writers have emphasized in their discussions of self-activity bodily movements as important in bringing about mental development. All of those who are interested in shopwork and the various forms of constructive activity are likely to regard the principle of self-activity as a principle which emphasizes chiefly bodily movements. There has been a marked tendency in much of the recent reform literature in education to emphasize this phase of the matter. On the other hand, some of the earlier writings, and here and there a passage in the later literature, emphasize the significance of personality and the development of self as important in education. This phase of the doctrine is perhaps most productively set forth in some of the recent discussions which point out how desirable it is that the school should cultivate the ability of pupils to initiate activities without the aid of the teacher or of any of the common devices which are adopted in classroom organization. We sometimes speak of the initiative of the child as the highest characteristic which can be cultivated through education. Activity in this case is not bodily activity—it is rather the expression of mental energy and mental spontaneity. The suggestions which appear in the literature of methodology for the cultivation of initiative on the part of the pupils are relatively few and vague. At the same time some of the recent treatments of the problem of how one should study bring us repeatedly to this problem of the cultivation of independent initiative in attacking studies. The problem of cultivating initiative will be taken up in the next paper; the present paper will

devote itself entirely to a discussion of the self-activity in its more obvious and concrete form of bodily activity as exhibited in the school exercises which involve such forms of behavior.

The question with which we shall deal in this paper may briefly be stated as follows: How far do the bodily activities which children exhibit on their own initiative serve as materials for education, and how far must these activities be modified through training? There is no need of reviewing in this connection the extensive literature which exists on instinctive forms of activity. It has been pointed out very fully in all of the studies which have been published by the students of child-study that education must in some sense begin with instinctive forms of behavior. It has also been shown in all of these studies that instincts undergo radical modifications as they develop into habits in mature life. Our problem is to determine how far the educational modifications of instincts may properly be recognized as limiting the validity of the doctrine of self-activity. Furthermore, education very often finds itself struggling with habits, in the effort to change an individual from what he would be through his own initiative into something which society would have him become. Thus when we learn that habit tends to become inflexible by repetition, that the individual has less and less conscious control over his habits the more they are repeated, we come on one of the striking antitheses between the natural evolution of the habit and the necessities of school training. Take for example the development of writing. In the early stages, when writing is a slow and laborious activity, the teacher and the child find themselves in co-operation in the effort to improve the form of the letters written. Without attempting to enter into too great detail as to the motives which prompt the pupil to write, it may be said that at this stage the child's spontaneous efforts to write furnish all of the material which the teacher needs in order to carry on the educational processes. But certainly by the time that the children reach the sixth and seventh grades there comes to be a very marked antagonism between the attitude of the teacher and the natural tendency of the child. The child at this stage in the effort to express himself tries to write as rapidly and fluently as possible, and it has frequently been noted in educational literature

that a deterioration in the form of the writing is very noticeable at this stage of school work. The teacher finds that it is necessary to stand in the way of the natural deterioration of the habit of writing. New motives, wholly external to the individual, must be presented for keeping the letters clear and legible in form. This means that the pupil's consciousness must be drawn back time and time again to a certain aspect of his behavior which by nature tends to drop out of sight. Nature must be supplemented in this case and the child's self-activity must be refined in literal opposition to his natural tendencies.

A similar situation appears in drawing. The child is attracted to drawing in the early stages of school life for reasons that are natural enough. He is interested in the expression of the ideas which he has in mind and he enjoys his own products. If he were allowed to go on drawing in a way that would be entirely satisfactory to himself he would fall into certain crude conventions which would be very primitive if not purely personal in their character. There are several stages in the drawings of children and untrained adults which indicate complete though unwarranted satisfaction with the work which they produce. During these periods of self-satisfaction the teacher finds that it is his obligation to arouse in the learner a certain dissatisfaction with his own work. This the teacher must do by bringing to the attention of the student other drawings which are superior to his own. Or the teacher must add through criticisms certain new points of view which would not suggest themselves to the learner who is gradually dropping into a convention. That there is opposition between educational interference and the natural tendencies appears in the fact that a student who is brought to a realization of his defects gives up entirely the cultivation of the art of drawing. This giving up of the drawing habit is nothing more nor less than a reaction to criticism. If the teacher could carry the pupil over the period of discouragement by some external force which acts upon the individual from without just as did the criticism, if he could enforce during this period of discouragement a certain amount of drill and practice which is not in keeping with the child's own desire, there would follow a mastery of drawing at a higher level. Actual school

experience shows abundantly that a period of discouragement may ultimately issue in successful behavior, but the later success of the behavior is not due to a natural impulse which has carried the child forward to the highest degree of perfection—it is due rather to a demand which has been imposed upon the child and carried far enough to perfect at a higher level an activity which if carried on merely spontaneously would never have gone to this higher level.

This same type of fact appears in the training of singers. Those who train singers find that their students must be carried beyond the natural stage of spontaneous self-activity in this art. The singing of the young child is undertaken because of the pleasure which he derives from the activity and he is able through his natural impulses to carry this art to a certain degree of perfection. If the educational activities stop with this natural tendency the learner will never reach the higher levels of perfection. Very often in the effort to reach the higher levels of perfection there is an intermediate period of discouragement and deterioration on the part of the pupil. He becomes self-conscious, as we sometimes say, and therefore less able to produce the sound. He becomes discouraged and his whole activity seems to be a failure, because it is no longer suggested by his own natural impulses and it is not yet satisfactory from the point of view of the critical teacher. Everything depends upon the way in which teachers manage a pupil at such a critical period. There is no final solution of this problem to the extreme partisan who would depend entirely on self-activity. One has to face frankly the fact that society is forcing upon the child standards which are external to the individual. Social demands may grow out of the aggregate of individual needs, but social demands are certainly more exacting than the natural tendencies of any individual.

Another example of the same type may be drawn from the experience of the manual-training teacher. Children come into the shops very enthusiastic about certain simple constructive activities which they wish to undertake. These constructive activities do not prove to be as easy as the children had expected. The natural impulse is to throw away the half-finished project or to use it in some imperfect and unsatisfactory form. Children who

are left to their own constructive devices very seldom complete an object in any such way as to make it acceptable to the careful critic. If the teacher begins to try to direct these natural constructive impulses with a view merely to self-activity on the part of the child, he will find that he cannot carry the activity forward very far, because he will encounter all of the obstacles that come when activity is felt to be tedious. The teacher therefore has the alternative of accepting very imperfect work and waiting in the hope that these imperfections will be corrected in due course of natural development, or he must take a hand in the process and modify the natural course of the activity by requiring of the pupil certain definite improvements upon his natural activity. These improvements are not suggested to the pupil from within. His attention must be drawn by some outside agency to the desirability of better adjustments in his movements and in his use of tools, and it is only when these external demands for improvement are emphatic that he is aroused to efforts in the direction of perfecting his behavior. To speak of these latter forms of behavior as forms of self-activity is to fail to recognize the educational principle which must be followed in their cultivation. All instruction which leads to higher forms of activity assumes the existence of certain canons of perfection which are external to the individual, and superior to his own natural impulses.

The converse of the educative influence of the group on the individual is shown by those cases of deterioration which result when some member of one of the higher races associates for a time with savage or semi-civilized peoples. Here, again, it is not individual impulses merely which operate to drag the person downward, it is the absence of external influences which are necessary to keep up the high tension of civilized conduct. Life in a highly organized society requires certain forms of effort and certain radical readjustments of conduct which could never have come through self-activity.

Another way of putting the matter is to say that social life creates new problems for which the individual is not prepared by his native equipment, Nowhere is this more clearly shown than in a study of emotions. Emotions are the conscious parallels of certain fundamental instinctive forms of behavior. The emotions

were at one time phases of very useful forms of self-activity. But with the development of social life the occasion for both the instinct and the emotion are largely gone. Take, for example, the emotion of anger. If an animal is interfered with in some activity or if he is engaged in combat it may be important for his self-preservation that he be aroused to a high pitch of excitement and to the most desperate struggle. An animal aroused to a state of rage will throw himself into an attitude of attack and will carry out the attack with unlimited vigor and with a use of every possible device of which he is capable. If a man were dependent upon his pure strength and upon his desperation of attack to achieve the ends of life, it would probably be advantageous for him very frequently to go about his activities in a high state of excitement or even anger. But we have come to recognize the fact that in civilized society the most effective action is that which is arranged with calm judgment. The argument seems to run, therefore, in the direction of a complete suppression of the emotion of anger. And yet there are undoubtedly social conditions which call for a much more vigorous attack than the calm, deliberate individual is likely to give them. The natural sort of anger is not useful. If any sort of anger is to be tolerated it must be of a socialized type. In the school we cannot allow the emotion to develop in a purely natural way, and if we try to hold to the principle of self-activity in any immediate and obvious interpretation of this principle we shall have great difficulty in knowing how to meet this situation which Nature has brought to us. If, on the other hand, we accept a higher principle of social guidance of natural activities, we may be able to turn the energy of natural emotional reaction in some new direction. In this case, however, we shall surely carry the individual through a period of suppression of his native, instinctive form of anger.

Another example of the same type appears in children's fears. When a child is afraid of a loud noise he is exhibiting a natural instinct which was of first importance to primitive man, who lived in a simple environment where any unfamilar noise meant the approach of some kind of danger. In the environment in which the civilized child grows up there are a great many noises which

would have been terrifying noises in the open forest in which primitive man lived, but are mere indications of the large undertakings of a community life which depends chiefly upon heavy machinery. It is not important that the child should be frightened at these noises. Indeed, we must gradually bring him to a discriminating mode of reaction which is entirely different from that which Nature has provided in his instinctive organization. If fear is to be of any use to the school child it must take on an entirely different form and application. This will require educational interference of some kind with the natural tendency of the individual.

The conclusions of this paper are not different from those which were reached in an earlier discussion of the principle of education according to Nature. Attention was there called to the fact that Nature must be modified and developed in the direction of better social adaptation. The conclusion of this discussion is that a child's activities need very radical modification if the child is to have advantageous forms of reaction upon his environment. In the next paper the present discussion will be continued, and it will be shown that the individual not only should modify his forms of reaction but should also learn to attack situations which are never presented in Nature. Furthermore, he should, by his attack upon these situations, discover new problems. The business of the teacher is to show to the individual the opportunities and requirements of behavior which do not suggest themselves to him in his natural, personal reactions upon his environment. The teacher must very often stimulate types of behavior which never could have had their origin in spontaneous self-activity.

EDITORIAL NOTES

Educational Discussions Should be Impersonal and Scientific

It may not be out of place to comment editorially on the difficulty which such a journal as this experiences in securing the right kind of material to place before its readers. There is educational experience of the greatest value going to waste all over the country because teachers and administrative officers do not know how to report their doings. Here are a few examples. A school superintendent who has worked out an organization for helping pupils to study refuses to report the progress of his organization because it would seem like boasting. There are doubtless others who have the same hesitancy about writing for educational publications. What these people need, and what we all need, is to cultivate the scientific attitude which is exhibited by writers and readers in all of the other technical journals. A physician or a surgeon who has treated a case with success reports the case to his colleagues as a case to be studied and understood. The impersonal attitude of the physician probably grows out of his recognition of the fact that any success he has had depends on his discovery of natural laws and his conformity to these laws. When he reports a case therefore he treats it as a report of natural law, not as a boast of personal achievement. Again, the engineer who has solved a difficult problem sends his plans to a technical journal with comments on his reasons for what he did. This is read with interest by other engineers and by students of engineering as a body of technical, scientific suggestion. The great discoveries of physics and chemistry and physiology are published without hesitation by the scientists who work in these fields. Why should teachers have a different attitude? The answer to this question is probably to be found in the failure of most educators to assume toward their work the scientific attitude.

They Should Not be Abstract

A second type of difficulty arises because some thoroughly practical men, when they sit down to write, feel that they must make abstract statements and must write about a great many different topics. The editors of this Journal have sought time and time again to get such material as that which was supplied by Superintendent Whitcher

in the January number of the *Elementary School Teacher,* and when the material came to hand—if indeed it came at all—it consisted not of a plain statement of details of actual experience, such as Superintendent Whitcher gave, but of abstract general statements about education in general. Or if facts were included with the general comments on education they were stated in such a guarded way that no one could possibly imitate them or profit by their suggestiveness, This type of difficulty is probably to be traced to the fact that most of the books on education are full of theories rather than descriptions of actual practices. The student of the histories of education easily falls into the mistake of believing that in order to make history in this field of activity one must give vent to some speculative platitudes. The fact is, of course, that the real history of the school has consisted in the organization of courses in arithmetic, in new devices for promoting pupils, in new methods of treating grammar. *Barnard's Journal* is of importance to the student of education today because it is full of facts on such topics. No one reads the theoretical articles in that journal. Manuscript after manuscript goes back from the *Elementary School Teacher* because it consists entirely of discussions and has no examples on which the discussion can stand.

Device Material Should be Accompanied by Explanatory Statements

A third type of paper which goes back is that which gives some material which has been used in school and is now offered for publication but without any adequate statement of the purpose for which it was made or the situation into which it fitted. The intelligent appreciation of a dramatic exercise, for example, depends upon some knowledge of the way in which the class was brought up to the exercise presented. Many has been the failure resulting from a hasty effort to use an exercise clipped from an educational publication, with a class trained in a wholly different way from the class which originally succeeded with this same exercise. Indeed, when one becomes critical of the cheap suggestions which are published in journals of methods, his criticism is sometimes justified, not by the material itself, which might be useful if properly placed, but rather by the fact that there is no careful statement of how the material shall be employed. There is here

the same danger that would arise from the distribution of a prescription which is not accompanied by a discriminating statement of the uses to which the prescription may be put. From time to time even poems come with the rest of the copy sent to the editor's desk. These purport to be useful to teachers but are usually unaccompanied by any statement as to the particular methods of application.

The Cultivation of a Professional Literature

A fourth difficulty which the editors of this Journal encounter is that people who are efficient in actual school work will not take the time to write. In other words, the claims of the profession are not heeded by these good people. They do not realize that if efficient organizers would only communicate with each other there would be great economy in the long run in the work of each because the experiences of others would be accessible to all. Colleges are making use of an instructor's published material in calling men to new positions. The recognition of the importance of a man's written work is apparent in the German schools today. The time will certainly come when a school board looking for a superintendent will take into account what he has written. The beginnings of this tendency appear at the present time in the disposition to read the annual reports of superintendents.

The Type of Article Which Is Solicited

The purpose of this editorial is to stimulate the creation of more professional educational literature of a high type. The time has come when a hearing can be had for such a literature. Serious educators are calling for something different from the abstract discussions which filled the older treatises. Scientific studies are being made in encouraging number. What is needed now is a general movement throughout the whole teaching profession in the direction of a full impersonal discussion of all current educational activities. This Journal seeks statements of facts from educational workers everywhere. These facts should be set forth with enough detail to be used by others. They should explain difficulties as well as favoring conditions. They should be made the basis of suggestions for new investigations which may carry forward in the spirit of practical application the experience already accumulated.

BOOK REVIEWS

New England Trees in Winter. By A. F. BLAKESLEE and C. D. JARVIS. Pp. 270. Published as Bulletin 69, Agricultural Experiment Station, Storrs, Conn. 1911.

This publication presents one hundred and eleven common New England trees as they appear in their winter condition. Most of these trees are found in other parts of the United States and Canada, which fact will make the book of universal interest. To teachers it is especially helpful to have so good a means of identification of trees at times when, through absence of leaves, identification is difficult to many people.

There is a clear and concise introductory discussion of the nature of a tree, followed by a key to the genera and species. Then each species of tree is presented in two pages, one of which is given to discussion of its habit, bark, twigs, leaf-scars, buds, fruit, comparisons, distribution, and wood. The other page is made up of photographic illustrations showing the form of the whole tree, the characteristics of the bark, twigs, buds; also flowers and fruit in those cases where they are winter characters. The illustrations are strikingly clear and representative. Altogether the presentation of the tree is such that the amateur students should be able to indentify these trees when found.

The book is bound in bulletin form and is sent to residents of Connecticut upon request and "to others who are specially interested in trees."

O. W. C.

The Social Composition of the Teaching Population. By LOTUS DELTA COFFMAN, PH.D. Published by Teachers College, Columbia University.

In this monograph Mr. Coffman reports the results of an inquiry which he made regarding the preliminary training and the experience of typical members of the teaching profession from a number of states. He sent out an inquiry to both rural and city school authorities from New Hampshire to Montana, and from the New England states to Texas. His inquiry does not cover all of the states of the Union, but it is regarded by the author as dealing with cases which are fairly representative of all types of teachers in the United States.

In addition to the questions mentioned above regarding experience and training, Mr. Coffman investigates the salary, the type of certificate now held by the teacher, the kinds of positions which he or she has held, and the home relation in which he grew up. The results of this investigation are presented in elaborate tables which make the material available for anyone who wishes to carry on like studies.

A general summary of the findings is given in a few paragraphs at the end of the volume. The following quotation indicates the scope of the inquiry and something of the results: "The typical American male public-school teacher, assuming that he can be described in terms of the medians previously referred to, but remembering that a median is a point about which individuals vary and that our hypothetical individual is as likely to be below as above it, is twenty-nine years of age, having begun teaching when he was almost twenty years of age after he had received but three or four years of training beyond the elementary school. In the nine years elapsing between the age

he began teaching and his present age, he has had seven years of experience, and h s salary at the present time is $489 a year. Both of his parents were living when he entered teaching, and both spoke the English language. They had an annual income from their farm of $700 which they were compelled to use to support themselves and their four or five children.

"His first experience as a teacher was secured in the rural schools, where he remained for two years at a salary of $390 per year. He found it customary for rural-school teachers to have only three years of training beyond the elementary school, but in order for him to advance to a town-school position he had to get an additional year of training. He also found that in case he wished to become a city-school teacher that two more years of training, or six in all, beyond the elementary school were needed.

"His salary increased rather regularly during the first six years of his experience, or until he was about twenty-six years of age. After that he found that age and experience played a rather insignificant part in determining his salary, but that training still afforded him a powerful leverage."

A similar paragraph describes the average characteristics of the woman teacher in American schools.

Such a study as this of the members of the teaching profession does much to indicate the problems that lie before the normal schools and colleges that train teachers, and it also gives a very clear notion of the problems which the superintendent and principal encounter when they attempt to fill their teaching staff. The book is a good illustration of the application of scientific methods to problems of school organization.

C. H. J.

Agencies for the Improvement of Teachers in Service. By WILLIAM CARL RUEDIGER. Washington, D.C.: Government Printing Office.

This monograph, published by the Bureau of Education, calls attention to the many efforts that are being made at the present time to induce teachers to continue their studies after they have become established in school work. School institutes are the agencies most commonly employed for the training of teachers in service. The study made by Mr. Ruediger of these institutes reports for the most part facts regarding their organization and support. The study is very conservative in its criticisms, these being for the most part expressed in quotations from papers written by other authors. One cannot help feeling as he reads the monograph that more emphasis should have been laid upon these criticisms of teachers' institutes. Mr. Ruediger, however, has evidently regarded it as his chief duty to offer examples of what is undertaken and he has given some examples of full programs and announcements.

The other agencies which are employed, particularly in cities where many teachers are brought together, make an encouraging showing, and the summer schools and correspondence schools are discussed at sufficient length to show the value of these means of instruction. There are very interesting reports on teachers' meetings in the monograph, which might very properly serve as suggestive examples for those who are in charge of such meetings.

The monograph calls attention to the large service that the Bureau of Education is rendering in presenting compact statements of the educational agencies in this country. Many of these monographs are of interest to individual teachers, and all of them are helpful to administrators who are organizing school work.

C. H. J.

BOOKS RECEIVED

AMERICAN BOOK CO., CHICAGO

German Epics Retold. By M. Bine Holly. Cloth. Pp. 336. $0.65.

Primary Language Lessons. By Emma Serl. Cloth. Illustrated. Pp. 160. $0.35.

D. APPLETON & CO., NEW YORK

A Reader for the Sixth Grade. By Clarence F. Carroll and Sarah C. Brooks. Cloth. Illustrated. Pp. 288.

A Reader for the Seventh Grade. By Clarence F. Carroll and Sarah C. Brooks. Cloth. Illustrated. Pp. 288.

Stories and Story-Telling. By Angela M. Keyes. Cloth. Illustrated. Pp. 286.

GINN & CO., CHICAGO

Heroes of Everyday Life. A Reader for the Upper Grades. By Fanny E. Coe. Cloth. Illustrated. Pp. 169. $0.40.

D. C. HEATH & CO., BOSTON

Primary Speller. By Edwin S. Richards. Cloth. Pp. 124.

HOUGHTON, MIFFLIN CO., BOSTON

A Handbook of Health. By Woods Hutchinson. Cloth. Illustrated. Pp. 348. $0.65.

MACMILLAN CO., NEW YORK

Third Reader. By Kate F. Oswell and C. B. Gilbert. Cloth. Illustrated. Pp. 244. $0.40.

Syllabus of a Course of Study on the History and Principles of Education. By Paul Monroe. Paper. $0.25.

How to Learn English. By Anna Prior and Anna I. Ryan. Cloth. Illustrated. Pp. 253. $0.55.

JOHN JOS. McVEY, PHILADELPHIA, PA.

Reclaiming a Commonwealth, and other Essays. By President Cheesman A. Herrick. Cloth. $1.00.

OHIO UNIVERSITY PRESS

The Ohio University Bulletin. Souvenir Edition for the Ohio University Summer School of 1911. Paper. Pp. 244.

GOVERNMENT PRINTING OFFICE, WASHINGTON, D.C.

Annual Report of the Board of Regents of the Smithsonian Institution. Cloth. Illustrated. Pp. 674.

Teachers' Certificates Issued under General State Laws and Regulations. By Harlan Updegraff. Paper. Pp. 269.

CURRENT EDUCATIONAL LITERATURE IN THE PERIODICALS[1]

IRENE WARREN
Librarian, School of Education, The University of Chicago

AFFLECK, G. B. Bibliography of physical training. June–October, 1911. Am. Phys. Educa. R. 16:579–92. (D. '11.)

ALLISON, SAMUEL B. Vocational courses and the elementary school. School and Home Educa. 31:155–58. (D. '11.)

ANDRESS, J. MACE. The aims, values, and methods of teaching psychology in a normal school. J. of Educa. Psychol. 2:541–54. (D. '11.)

BAGLEY, W. C. The outcomes of teaching. School and Home Educa. 31:140–44. (D. '11.)

BALDWIN, CHARLES SEARS. Intercollegiate debate. Educa. R. 42:475–85. (D. '11.)

BARDEEN, C. W. The monopolizing woman teacher. Educa. R. 43:17–40. (Ja. '12.)

BLACK, JESSIE, and WARREN, IRENE. A brief suggestive list of reading for children in the elementary school. El. School T. 12:145–50. (D. '11.)

BOBBITT, JOHN FRANKLIN. The efficiency of the consolidated rural school. El. School T. 12:169–75. (D. '11.)

BOURNE, HENRY ELDRIDGE. The liberation of good will. Univ. of Chic. M. 4:1–13. (N. '11.)

BROWN, J. STANLEY. The functions of a modern high school in a system of public schools. School and Home Educa. 31:144–47. (D. '11.)

CAPEN, SAMUEL P. The supervision of college teaching. Pedagog. Sem. 18:543–50. (D. '11.)

COLLINS, JOSEPH V. How to get greater efficiency in arithmetic. Educa. Bi-mo. 6:103–10. (D. '11.)

CONKLIN, EDMUND S. The pedagogy of college ethics. Pedagog. Sem. 18: 421–74. (D. '11.)

[1] Abbreviations.—Am. Phys. Educa. R., American Physical Educational Review; Atlan., Atlantic Monthly; Cent., Century Magazine; Educa., Education; Educa. Bi-mo., Educational Bi-monthly; Educa. R., Educational Review; El. School T., Elementary School Teacher; Harp. W., Harper's Weekly; Journ. of Educa. Psychol., Journal of Educational Psychology; New England M., New England Magazine; Pedagog. Sem., Pedagogical Seminary; Pop. Sci. Mo., Popular Science Monthly; School and Home Educa., School and Home Education; School R., School Review; School W., School World; Univ. of Chic. M., University of Chicago Magazine; Voca. Educa., Vocational Education.

COOK, JOHN W. History of education. XV. School and Home Educa. 31:149–55. (D. '11.)

COOLEY, EDWIN G. Pre-apprenticeship schools of London. Voca. Educa. 1:174–83. (Ja. '12.)

COOPER, CLAYTON SEDGWICK. The American undergraduate. Cent. 83: 377–87. (Ja. '12.)

CROCHERON, B. H. A very real country school. World's Work 23:318–26. (Ja. '12.)

DAVENPORT, CHARLES B. The origin and control of mental defectiveness. Pop. Sci. Mo. 80:87–90. (Ja. '12.)

DUFFY, FRANK. How shall the obligation to provide industrial education be met? Voca. Educa. 1:193–95. (Ja. '12.)

EASTMAN, CHARLES A. Education without books. Craftsman 21:372–77. (Ja. '12.)

ELIOT, CHARLES W. The university president in the American commonwealth. Educa. R. 42:433–49. (D. '11.)

FISHBACK, E. H. The supervision of teachers. Educa. 32:234–36. (D. '11.)

GAYLER, G. W. A study of the enrolment by grades of fourteen school systems of central Illinois. School and Home Educa. 31:147–49. (D. '11.)

GRANT, PERCY STICKNEY. A Puritan school. New England M. 45:286–94. (N. '11.)

GRIFFIN, SOLOMON BULKLEY. The political evolution of a college president. Atlan. 109:43–51. (Ja. '12.)

GRUENBERG, BENJAMIN C. Some aspects of the child-welfare problem in the New York high schools. School R. 19:684–88. (D. '11.)

GUSTAFSON, LEWIS. A new task for the public schools. Voca. Educa. 1: 145–58. (Ja. '12.)

HALE, WILLIAM GARDNER. The practical value of humanistic studies. School R. 19:657–79. (D. '11.)

HANDSCHIN, C. H. Problems in the teaching of modern languages. Educa. 32:203–13. (D. '11.)

HEETER, S. L. The school of tomorrow. Educa. R. 42:465–74. (D. '11.)

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